

Remarks/Arguments

Claims 1, 11-13, 21, 25, 37-39 and 53 have been amended. Claim 61 has been added.

Enclosed herewith is a check in the amount of \$700.00 to cover the fee for the added independent claim and the fee for the two-month extension of time. Please charge any additional fees for entry of this Amendment to our Deposit Account No. 03-3415.

Regarding applicants' previously submitted Information Disclosure Statement with attached form equivalent to PTO-1449, mailed June 30, 2005, the Examiner is respectfully requested to mark one copy of the form (equivalent to PTO-1449) indicating that the Examiner has reviewed the listed documents and return the marked copy to applicants' undersigned attorney.

The Examiner has rejected applicants' claims 1-59 under 35 USC § 103(a) as being unpatentable based on the Black (US 6,307,956 B1) patent. With respect to applicants' claims, as amended, this rejection is respectfully traversed.

Applicants' independent claim 1 has been amended to recite as follows: A system for issuing an authentication certificate used in personal authentication, comprising: reaction means for reacting a DNA array in which a plurality of DNA probes corresponding to plural kinds of genes are arranged in a predetermined order, with a gene obtained from a given person; issuing means for issuing an authentication certificate for certifying the person; and controlling means for executing a process comprising the steps of: (i) making said reaction means react the DNA array with a gene obtained from the given person to form a hybridization pattern; and (ii) making said issuing means issue an authentication certificate by using the hybridization pattern. Independent claims 11, 21, 25, 37-39, 53 have been similarly amended.

In particular, the present invention utilizes as authentication information layout information which represents a hybridization pattern formed on a reacted DNA array obtained by reacting a DNA array with a gene obtained from a person. As recited in each of applicants' independent claims, plural DNA probes corresponding to plural kinds of genes are arranged in a predetermined order.

Such constructions are not taught or suggested by the Black patent. More particularly, the Black patent discloses the use of a stylus with biometric properties for identity recognition and verification, and uses fingerprints as the biometric property. The Black patent also discloses that DNA can be utilized for identity verification (column 4, lines 31-35; column 25, lines 28-35). However, the Black patent neither discloses nor suggests applicants' claimed feature of reacting a DNA array in which a plurality of DNA probes corresponding to plural kinds of genes are arranged in a predetermined order, with a gene obtained from a given person, and issuing an authentication certificate by using the hybridization pattern.

In the Office Action, the Examiner acknowledges that "Black does not specifically reference recording the DNA layout information by arranging probe layouts in row and column directions," but Examiner states that "it would be obvious to one of ordinary skill in the art that array of immobilized single-stranded DNA (ssDNA) could be arrayed as rows and columns or any other logical manner (e.g. col 25 ln 25-35)." Contrary to the Examiner's assertion, it would not have been obvious to modify the teachings of the Black patent to produce applicants' claimed invention for several reasons. First, the Black patent neither discloses nor suggests any sort of specific identity verification structure in which a DNA chip is utilized. Instead, the Black patent states in general that "Arrays of immobilized single-stranded DNA (ssDNA) probes, so-called DNA chips, are being used for genetic analysis for

disease detection ...”, and that such arrays may be employed in an identity verification system. (col. 25, lines 28-35). Hence, the Examiner’s arguments that the applicants’ claimed invention is obvious improperly uses hindsight knowledge of the applicants’ invention in order to make the proposed modification to the cited Black patent. Second, the fact that a reference “can be” modified does not necessarily mean that the modification is “obvious” to one of ordinary skill in the art. Applicants’ claimed invention specifically calls for “reacting a DNA array in which a plurality of DNA probes corresponding to plural kinds of genes are arranged in a predetermined order, with a gene obtained from a given person,” as recited in applicants’ claim 1 and similarly recited in each of the other independent claims. There are likely various other techniques in which DNA chips may be utilized and certainly it would be improper to readily assert that any and all such techniques would be obvious to one of ordinary skill in the art.

Accordingly, applicants’ independent claims 1, 11 21, 25, 37-39, 51-53 and 57-59, and their respective dependent claims, in reciting in one form or another issuing an authentication certificate using a hybridization pattern that is formed by reacting a DNA array in which a plurality of DNA probes corresponding to plural kinds of genes are arranged in a predetermined order, with a gene obtained from a given person, thus patentably distinguish over the Black patent. It is therefore requested that the rejection of claims 1-59 be withdrawn.

Independent claim 60 was added in applicants’ prior response dated March 28, 2005. Since claim 60 was not rejected, it is requested that claim 60 be allowed. It is noted that the foregoing discussion is equally applicable to claim 60.

New independent claim 61 is presented. Claim 61 recites an authentication method

with particular steps that are not disclosed in the Black patent. In addition, the foregoing discussion is also applicable to new claim 61. Accordingly, the allowance of new claim 61 is solicited.

In view of the above, it is submitted that applicants' claims, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration of the claims is respectfully requested.

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Respectfully submitted,

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